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UNITED STATES PATENT AND TRADEMARK OFFICE

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09/752,202	12/30/2000	David A. Eatough	42390P10210	8106

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BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD, SEVENTH FLOOR
LOS ANGELES, CA 90025

EXAMINER
SHAW, JOSEPH D

ART UNIT	PAPER NUMBER
2141	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 09/752,202	Applicant(s) EATOUGH, DAVID A.
	Examiner Joseph D Shaw	Art Unit 2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _30 December 2000_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-32_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-32_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _02 April 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in

this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 15, 16, 20, and 22 are rejected under 35 U.S.C. 102(e) as being

anticipated by Hegde (6,067,557).

   a.   As per claim 15, Hegde teaches:

   adding a task to said task pool (bandwidth manager manages system

processes; those task were inherently added to the bandwidth manager;

col. 5, lines 45-52);

   estimating the bandwidth to be employed to complete said task

(bandwidth manager lists bandwidth requirements for each process; col.

5, lines 45-52);

   assigning a priority value to said task, wherein said priority

value is based at least in part on the estimated bandwidth (processes

are assigned a count value in relative correspondence to each process'

required bandwidth; col. 6, lines 31 - 56); and

   updating said task pool based at least in part on completion of

said task (a process can un-register with the bandwidth manager if it

is complete and bandwidth reallocated; col. 8, line 66 - col. 9 line
7).

b.   As per claim 16, Hegde discloses the claimed invention described
above and furthermore teaches:

creating the task pool based at least in part on a pool of
uncompleted network related tasks (a process can un-register with the
bandwidth manager if it is complete; uncompleted tasks are registered
with the bandwidth manager; col. 8, line 66 - col. 9 line 7).

c.   As per claim 20, Hegde discloses the claimed invention described
above and furthermore teaches:

assigning   a   priority   value   via   an   automated   methodology
(bandwidth manager keeps track of all processes and the percentage of
bandwidth use and adjusts priorities every timer tick; bandwidth
manager runs as part of the system timer code; col. 5, line 64 - col.
6, line 14).

d.   As per claim 22, Hegde discloses the claimed invention described
above and furthermore teaches:

removing said task from said task pool based at least in part on
completion of said task (a process can un-register with the bandwidth
manager if it is complete and bandwidth reallocated; col. 8, line 66 -
col. 9 line 7).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis

for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically
disclosed or described as set forth in section 102 of this title, if the
differences between the subject matter sought to be patented and the prior
art are such that the subject matter as a whole would have been obvious at
the time the invention was made to a person having ordinary skill in the
art to which said subject matter pertains. Patentability shall not be
negatived by the manner in which the invention was made.

4.   Claims 1-5, 9-10, 21, 23-24, and 27-30 are rejected under 35 U.S.C.

103(a) as being unpatentable over Hegde (6,067,557) in view of Shah et al.

(US 2002/0075869).

e.   As per claim 1, Hegde teaches:

maintaining a pool of network related tasks (bandwidth manager

manages several system processes, processes could be network traffic,

i.e. IP or IPX; col. 4, lines 46-54; col. 5, lines 45-52);

assigning a priority value to at least a portion of said network

related tasks, wherein said priority value is based at least in part on

bandwidth to be employed in order to process the network related tasks

(processes are assigned a count value in relative correspondence to

each process' required bandwidth; col. 6, lines 31 – 56); and

processing said network related tasks based at least in part on

the priority values, and the available network bandwidth (process

assigned the highest value is executed; completed processes give up

their share of the bandwidth, available bandwidth goes up; col. 6,

lines 57-67; col. 8 line 66 – col. 9, line 7).

However, the Hegde invention is related to CPU bandwidth, and not

network bandwidth. Additionally, Hegde does not teach monitoring the

available network bandwidth. Shah teaches that network tasks can be

processed based on a priority of the task and an available network

bandwidth (during times of limited bandwidth, higher priority packets

are serviced while lower priority packets are dropped or serviced

later; Abstract; page 7, paragraph 0069; pages 9-10, paragraph 0086).

Furthermore, Shah teaches:

periodically monitoring available network bandwidth on a network

(pages 9-10, paragraph 0086).

It would have been obvious to one of ordinary skill in the art at

the time of the invention to include managing tasks with a priority

based upon available network bandwidth, as taught by Shah, in the Hegde

invention because network bandwidth can be an equally as precious

resource as CPU bandwidth in modern computer systems that require

extensive communications. Furthermore, it would have been obvious to

one of ordinary skill in the art at the time of the invention to

include monitoring available network bandwidth, as taught by Shah, in

the Hegde invention because this would allow the invention to take

advantage of changes in the available bandwidth.

f.   Claims 23 and 28 recite similar limitations to claim 1 and are

rejected on the same grounds as claim 1.

g.   As per claim 2, Hegde discloses the modified claimed invention

described above. Furthermore, Hegde teaches:

creating the task pool based at least in part on a pool of

uncompleted network related tasks (a process can un-register with the

bandwidth manager if it is complete; uncompleted tasks are registered

with the bandwidth manager; col. 8, line 66 - col. 9 line 7).

h.   Claim 27 recites similar limitations to claim 2 and is rejected on the same grounds as claim 2.

i.   As per claim 3, Hegde discloses the modified claimed invention described above.   However, the modified Hegde invention does not explicitly teach entering additional network related tasks into the task pool through a user interface.   "Official Notice" is taken that both the concept and advantages of having a user enter tasks into a computer system via a user interface are well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the modified Hegde invention to include a user interface for entering network related tasks into the task pool because this would provide a means for a user of the computer system or a system administrator to enter tasks that need to be processed on the computer system.

j.   As per claim 4, Hegde discloses the modified claimed invention described above.   However, the modified Hegde invention does not explicitly teach entering additional network related tasks into the task pool automatically via a computing system coupled to said network. Shah teaches:

entering additional network related tasks into a task pool automatically via a computing system coupled to a network (receives packets, packets await further transmission and are transmitted based on their priority, packets are inherently generated by a computer

system coupled to the network; page 4, paragraph 0046; page 7, paragraph 0069; pages 9-10, paragraph 0086).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include entering additional network related tasks into the task pool automatically via a computing system coupled to said network, as taught by Shah, in the modified Hegde invention because computer systems generally create new tasks based on the results of previous tasks and this would allow those computer systems a method for having their new tasks processed by the network.

k.   As per claim 5, Hegde discloses the modified claimed invention described above. Furthermore, Hegde teaches:

updating the task pool based at least in part on completed tasks (a process can un-register with the bandwidth manager if it is complete and bandwidth reallocated; col. 8, line 66 - col. 9 line 7).

l.   Claim 29 recites similar limitations to claim 5 and is rejected on the same grounds as claim 5.

m.   As per claim 9, Hegde discloses the modified claimed invention described above. Furthermore, Hegde teaches:

executing a command line in said at least one task of said network related tasks (inherent in computer systems that tasks call upon an instruction(s) to execute).

n.   As per claim 10, Hegde discloses the modified claimed invention described above. Furthermore, Hegde teaches:

initiating tasks by a resident application wherein a resident application further comprises software capable of initiating tasks (processes service the request of the Network Management System, the Network Management System responsible for enforcing policies; col. 3, lines 40-47; col. 4, lines 34-45).

o.   As per claim 21, Hegde discloses the claimed invention described above and furthermore teaches:

comparing the estimated bandwidth with available bandwidth (processes require a certain percentage of CPU use, CPU share may change dynamically depending on how busy (available) the system is, processes are assigned a count value in relative correspondence to each process' required CPU percentage; col. 5, lines 53-63; col. 6, lines 32-43).

However, the Hegde invention is related to CPU bandwidth, and not network bandwidth. Shah teaches that network tasks can be processed based on a priority of the task and an available network bandwidth (during times of limited bandwidth, higher priority packets are serviced while lower priority packets are dropped or serviced later; Abstract; page 7, paragraph 0069; pages 9-10, paragraph 0086).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include managing tasks with a priority based upon available network bandwidth, as taught by Shah, in the Hegde invention because network bandwidth can be an equally as precious resource as CPU bandwidth in modern computer systems that require extensive communications.

p.   As per claim 24, Hegde discloses the claimed modified invention described above and furthermore teaches:

initiating said network related tasks by an automated methodology (for each clock tick, a process assigned the highest count value is executed; col. 5, line 64 – col. 6, line 11; col. 6, lines 44-67).

q.   Claim 30 recites similar limitations to claim 24 and is rejected on the same grounds as claim 24.

5.   Claims 6, 25, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hegde (6,067,557) in view of Shah et al. (US 2002/0075869), as applied to claims 1, 23, and 28 above, and further in view of Ruttenburg et al. (US 2002/0083185).

r.   As per claim 6, Hegde discloses the modified claimed invention described above.   However, the modified Hegde invention does not explicitly teach the priority of a task being based on the size of a file associated with the task.   Ruttenburg teaches:

the priority value for a network related task is determined based at least in part on the file size of said at least one task, wherein said at least one task further comprises at least one file (priority is determined based available bandwidth and file size of a file to be transmitted; page 6, paragraph 0063).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the modified Hegde invention to base the priority of a task in part on the file size of a file associated with the task, as taught by Ruttenburg, because tasks associated with larger files would require a higher amount of network

bandwidth (priority is also partly determined by required bandwidth as

taught in the parent claim) to transmit as compared to smaller files.

s.   Claims 25 and 32 recite similar limitations to claim 6 and are

rejected on the same grounds as claim 6.

6.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Hegde (6,067,557) in view of Shah et al. (US 2002/0075869), as applied to

claim 1 above, further in view of Datta et al. (US 2002/0087722), and further

in view of Admitted Prior Art (APA).

t.   As per claim 7, Hegde discloses the modified claimed invention

described above.   However, the modified Hegde invention does not

explicitly teach monitoring the available bandwidth by sending and

receiving PINGs and bandwidth PINGs.   Datta teaches:

sending a PING across a network and receiving an echo response

across said network (contain status information on whether a router

responded to a ping; page 3, paragraph 0024).

However, while Datta does make mention to storing bandwidth

information (additional detail may be stored, such as the bandwidth or

latency of a link; page 3, paragraph 0024) Datta does not explicitly

teach using a bandwidth ping and the associated response in determining

the bandwidth.   APA teaches:

sending a bandwidth PING across a network and receiving a

bandwidth response across said network (BING, commonly known in the

art, transmits a packet of known size across the network to estimate

bandwidth; inherent that the BING would receive a response because

otherwise it would have no idea of a time interval to use for throughput determination; page 5, lines 1-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the modified Hegde invention to include monitoring bandwidth by sending and receiving PINGs and bandwidth PINGs, as taught by Datta and APA, because PINGs allow for an understanding of the topology of the network, as taught by Datta (page 6, paragraph 0024), allowing bandwidth PINGs to be sent according to the known topology. Bandwidth PINGs are advantageous for the modified Hegde invention because a bandwidth PING is commonly known in the art as a way to measure bandwidth, as taught by APA (page 5, lines 1-10), and would alleviate the need for the designer to develop a proprietary method of bandwidth measurement.

7.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hegde (6,067,557) in view of Shah et al. (US 2002/0075869), as applied to claim 1 above, and further in view of Beyssac (Announcing BING, a Small Raw IP Throughput Measurement Utility).

u.   As per claim 8, Hegde discloses the modified claimed invention described above. However, the modified Hegde invention does not explicitly teach monitoring the available bandwidth by transferring data files and measuring transfer times. Beyssac teaches:

transferring a data file across a network and determining an estimate of the available bandwidth based at least in part on the elapsed time to transfer said data file (throughput is determined by measuring echo request roundtrip times for different packet sizes; lines 10-14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the modified Hegde invention to monitor the available bandwidth by transferring data files and measuring transfer times, as taught by Beyssac, because it is well known in the art that bandwidth is measured in units of size divided by time and if you have a file of known size, you can divide it by the time to transfer in order to obtain bandwidth.

8.   Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Datta et al. (US 2002/0087722) in view of Admitted Prior Art (APA).

v.   As per claim 11, Datta teaches discovering network connectivity and bandwidth by:

transmitting a PING (Packet Internet Gopher) from a source node on a network to a destination node on said network (contain status information on whether a router responded to a ping; page 3, paragraph 0024);

receiving an echo response at said source node from said destination node (contain status information on whether a router responded to a ping; page 3, paragraph 0024); and

reporting at least a portion of the data received to a network management system (DNS resolver comprises a data component that stores network topology; page 3, paragraph 0024).

However, while Datta does make mention to storing bandwidth information (additional detail may be stored, such as the bandwidth or latency of a link; page 3, paragraph 0024) Datta does not explicitly teach using a bandwidth ping and the associated response in determining the bandwidth. APA teaches:

transmitting a bandwidth PING from said source node to said destination node (BING, commonly known in the art, transmits a packet of known size across the network to estimate bandwidth; page 5, lines 1-10); and

receiving a bandwidth echo at said source node (inherent that the BING would receive a response because otherwise it would have no idea of a time interval to use for throughput determination).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Datta invention to include determining the bandwidth via a bandwidth PING, as taught by APA, because a bandwidth PING is commonly known in the art as a way to measure bandwidth, as taught by APA (page 5, lines 1-10), and would alleviate the need for the designer to develop a proprietary method of bandwidth measurement.

w.   As per claim 12, Datta discloses the modified invention as described above.   However, the modified Datta invention does not explicitly teach repeating the above steps for any other sources on the network.   "Official Notice" is taken that both the concept and advantages of repeating a procedure on other devices is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the modified Datta invention to include repeating the network topology discovery steps of the modified Data invention over other source nodes on the network because then other nodes on the network would be able to understand the network topology as well.

x.   As per claim 13, Datta discloses the modified invention as described above.   However, the modified Datta invention does not *explicitly* teach the PING and echo response conforming with Internet Control Message Protocol (ICMP).   APA teaches:

PING and the echo response substantially conform with ICMP (PING comprises a program that utilizes ICMP to transmit electronic information; page 4, lines 14-15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have the PING and echo in the modified Datta invention conform to ICMP, as taught by APA, because ICMP is a well-defined Internet standard, outlined in RFC 792, as taught by APA (page 4, lines 15 - 17).

y.   As per claim 14, Datta discloses the modified invention as described above.   Furthermore, APA teaches:

said bandwidth PING and bandwidth echo substantially conforming with the Beyssac protocol (BING, developed by Pierre Beyssac; page 5, lines 2-5).

9.   Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hegde (6,067,557).

z.   As per claim 17, Hegde discloses the claimed invention described above.   However, the Hegde invention does not explicitly teach entering additional network related tasks into the task pool through a user interface.   "Official Notice" is taken that both the concept and advantages of having a user enter tasks into a computer system via a user interface are well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Hegde invention to include a user interface for entering network related tasks into the task pool because this would provide a means for a user of the computer system or a system administrator to enter tasks that need to be processed on the computer system.

aa.   As per claim 18, Hegde discloses the claimed invention described above. However, the Hegde invention does not explicitly teach adding a task to said task pool automatically via a resident application. "Official Notice" is taken that both the concept and advantages of having a resident application on a computer system creating tasks that need processing are well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Hegde invention to include adding additional tasks into the task pool automatically via a resident application because applications resident on computer systems generally create new tasks based on the results of previous tasks and this would allow those applications a means for having their new tasks processed.

10.   Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hegde (6,067,557) in view of Lin et al. (6,026,230).

bb.   As per claim 19, Hegde discloses the claimed invention described above.   However, the Hegde invention does not explicitly teach obtaining a priority value from an external source. Lin teaches:

obtaining a priority value for a task from an external source
(jobs have priority levels, priority levels are settable by the system
administrator; col. 84, lines 3-21).

It would have been obvious to one of ordinary skill in the art at
the time of the invention to modify the Hegde invention to include
obtaining priority levels for tasks from an external source, as taught
by Lin, because a system administrator would then be able to set the
priorities on tasks, ensuring that the tasks most important to that
system administrator are handled first.

11.   Claims 26 and 31 are rejected under 35 U.S.C. 103(a) as being
unpatentable over Hegde (6,067,557) in view of Shah et al. (US 2002/0075869),
as applied to claims 23 and 28 above, and further in view of Lin et al.
(6,026,230).

cc.   As per claim 26, Hegde discloses the claimed modified invention
described above.   However, the modified Hegde invention does not
explicitly teach obtaining a priority value from an external source.
Lin teaches:

obtaining a priority value for a task from an external source
(jobs have priority levels, priority levels are settable by the system
administrator; col. 84, lines 3-21).

It would have been obvious to one of ordinary skill in the art at
the time of the invention to modify the modified Hegde invention to
include obtaining priority levels for tasks from an external source, as
taught by Lin, because a system administrator would then be able to set
the priorities on tasks, ensuring that the tasks most important to that
system administrator are handled first.

dd.   Claim 31 recites similar limitations to claim 26 and is rejected

on the same grounds as claim 26.

Conclusion

12.   Any inquiry concerning this communication or earlier communications

from the examiner should be directed to Joseph D Shaw whose telephone number

is 703-305-0094.   The examiner can normally be reached on Monday - Thursday

and alternate Fridays, 7am - 4pm.

13.   If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Rupal Dharia can be reached on 703-305-4003.   The fax

phone number for the organization where this application or proceeding is

assigned is 703-872-9306.

14.   Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system.   Status

information for published applications may be obtained from either Private

PAIR or Public PAIR.   Status information for unpublished applications is

available through Private PAIR only.   For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access

to the Private PAIR system, contact the Electronic Business Center (EBC) at

866-217-9197 (toll-free).

Joseph Shaw
Examiner
AU 2141

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER